



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30303

Report Nos.: 50-338/84-12 and 50-339/84-12

Licensee: Virginia Electric and Power Company
 Richmond, VA 23261

Docket Nos.: 50-338 and 50-339

License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Dates: May 6 - June 5, 1984

Inspection at North Anna site near Mineral, Virginia

Inspectors:	<u><i>S. Elrod</i></u>	<u>6/20/84</u>
	M. W. Branch, Senior Resident Inspector	Date Signed
	<u><i>S. Elrod</i></u>	<u>6/20/84</u>
	J. G. Luehman, Resident Inspector	Date Signed
Approved by:	<u><i>S. Elrod</i></u>	<u>6/20/84</u>
	S. Elrod, Section Chief 2C	Date Signed
	Division of Reactor Projects	

SUMMARY

Areas Inspected:

This routine inspection by the resident inspectors involved 215 inspector hours onsite in the areas of Surveillance and maintenance activities, followup of previous inspection findings, IE circulars and bulletins, safety system walkdowns, followup of Licensee event reports, TMI action plan items, and annual equipment calibration.

Results:

Of the 8 areas inspected, no violations or deviations were identified.

8407180164 840621
 PDR ADOCK 05000338
 Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *E. W. Harrell, Station Manager
- G. E. Kane, Assistant Station Manager
- *M. L. Bowling Assistant Station Manager
- L. Johnson, Superintendent, Technical Services
- J. R. Harper, Superintendent, Maintenance
- R. O. Enfinger, Superintendent, Operations
- A. L. Hogg, Jr., QC Manager
- *S. B. Eisenhart, Licensing Coordinator
- J. R. Hayes, Operations Coordinator
- J. P. Smith, Engineering Supervisor
- F. Terminella, Engineering Supervisor
- M. G. Pinion, Engineering Supervisor
- A. H. Stafford, Health Physics Supervisor
- E. C. Tuttle, Electrical Supervisor
- R. A. Bergquist, Instrument Supervisor
- D. E. Thomas, Mechanical Maintenance Supervisor
- L. B. Jones, Chemistry Supervisor
- *F. P. Miller, QC Supervisor
- J. A. Smith, QC Supervisor

Other licensee employee contacted included technicians, operators, mechanics, security force members, and office personnel.

2. Exit Interview

The inspection scope and findings were summarized on June 6, 1984, with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

(Closed) 339/83-18-03 Failure to follow posted Radiation work permit (RWP). The inspectors have reviewed the licensee's response to this violation dated November 18, 1983, and have no further questions.

4. Unresolved items

Unresolved items were not identified during this inspection.

5. Plant Status

Unit 1

The unit operated at or near 100% power until 2113 on May 11, 1984 at which time a rampdown was commenced in order to shutdown for the scheduled

refueling outage. The reactor was shutdown on 0704 on May 12, 1984 and ended the inspection period in Mode 5.

Unit 2

The shutdown for reactor trip breaker inspection and maintenance continued through the first few days of the inspection period with the unit being brought back on line at 0055 on May 8, 1984. For the remainder of the inspection period the unit operated at or near 100% power.

6. Licensee Event Report (LER) Followup

The following LER's were reviewed and closed. The inspector verified that reporting requirements had been met, causes had been identified, corrective actions appeared appropriate, generic applicability had been considered, and the LER forms were complete. Additionally, for those reports identified by asterisk, a more detailed review was performed to verify that the licensee had reviewed the event, corrective action had performed been taken, no unreviewed safety questions were involved, and violations of regulations or Technical Specification (TS) conditions had been identified.

339/83-59	Inverter for vital bus 2-I failed.
339/84-02	Unit manually tripped after a turbine trip.
339/79-156	Lexan reservoir tube for snubber 1-RC-HSS-873 found damaged.
338/80-24	Main feedwater flow transmitters found to be isolated.
338/80-17	Measured values for FQ exceeded the design value tolerance
338/80-30	"B" gaseous waste filter charcoal absorber operated greater than 720 hrs.
338/80-41	1-PT-133.1B not performed on schedule
338/80-94	1-PT-133.1B not performed on schedule
338/80-89	Calibration of the high steam line flow setpoint not performed as required by T.S.
338/80-81	Protection channel RTD not calibrated within surveillance interval.
338/80-67	1-PT-57.7 was not performed within surveillance interval.
339/80-62	2-PT-52.2 was not performed within surveillance interval.
339/80-54	1-CM-P-2B placed in service without verifying operability.
*338/82-69	PORV Found closed leaving RCS with inadequate over pressure protection.
*338/83-73	Containment average temperature dropped below 86°F.
*339/83-53	Containment Isolation valve 2-DA-9 found open.
*338/80-107	1B steam generator pressure indicator indicating high.
*338/83-22	Numerous valves not tested in accordance with ASME XI IWV program.
*339/83-72	MOV-2860A failed to fully open.
*339/80-105	PT-2466 failed high due to freezing of sensing line.
*338/83-64	TV-MS-101B required greater than 2 minutes to close.
*339/80-05	Operability of 2H diesel not properly verified.

*338/80-77 Low Head Safety Injection flow path improperly aligned.
 *339/80-89 PT 26.3 was not performed during the required interval.
 *339/80-51 Operability of 2-FW-126 not checked after maintenance.
 *338/77-05 Degradation of service water reservoir.
 *338/83-48 "A" service water supply breaker isolated for
 Rev. 1 repairs.
 338/78-118 Containment mat vertical sensors actuated with no other
 indication of seismic disturbance.
 338/78-60 Containment mat response spectrum recorder inoperable.
 338/80-103 Containment mat seismic monitor failed 1-PT-39.5
 338/80-109 Steam generator comparators set at the wrong setpoint.
 339/80-08 Failed Tave protection channel was not placed in trip mode
 within one hour.

(Closed) LER 338/82-69 PORV found closed, leaving the RCS with inadequate overpressure protection. The PORV had been blocked open to provide cold over pressurization protection. The valve was subsequently found closed. The licensee's long term corrective actions to prevent recurrence were to manufacture a better blocking device and to write a procedure for use and control of the device. The inspector verified that both of these actions have been completed.

(Closed) LER 338/83-73 Containment average temperature dropped below 86°F after changing heat loads. Procedures 1, 2-OP-14.1 "Residual Heat Removal System" have been revised adding precautions to closely monitor containment temperature when changing the lineup of large heat loads such as the component cooling water systems with the plant in a shutdown condition.

(Closed) LER 339/83-53 Outside containment Isolation Valve 2-DA-9 found open. The inspectors verified the licensee's corrective action which was to change the valve lineup to warn the operator of the potentially confusing characteristics and orientation of this valve.

(Closed) LER 338/80-107 1B Steam generator pressure indicator indicating high. The cause of the problem was a frozen sensing line. The licensee committed to installing metal panels (louvers) on the main steam valve house lower door. The inspectors verified these panels have been made and used during cold weather. Additionally, insulation is added to the main steam valve house penetrations, as required during cold weather, as part of Mechanical Administrative Procedure MD ADM 20.0 "Plant Winterization Program".

(Closed) LER 338/83-22 Numerous valves not tested in accordance with ASME XI IWV program. A total review of the station ASME XI IWV program was completed and a revised program was submitted to the NRC October 5, 1983. In a letter dated April 17, 1984, the NRC granted VEPCO interim approval of the program while it was being reviewed. This approval expires December 31, 1984 but can be extended by a written request from the licensee if the review has not been completed by the specified date.

(Closed) LER 338/82-080 A containment isolation service air valve was found open and unattended. The licensee committed to conducting a review of the administrative control of locked valves for both units. That review has been completed. In the case of TS valves no deficiencies were found. For non-Technical Specification locked valves, some inconsistencies between the two units were identified and are being corrected by procedure change.

(Closed) LER 339/83-72 MOV-2860A failed to fully open. The licensee's long term corrective action was to remove the unused supports on the stem extensions of the Motor operated valves (MOV's). The inspectors verified that an Engineering Work Request (EWR) had been issued and the subsequent work orders generated and completed.

(Closed) LER 339/80-105 PT-2466 failed high due to freezing of sensing line. The inspectors verified that the licensee has instituted the corrective actions specified in the report. The "Loss of Vital Instrumentation," abnormal procedure (1-AP-3) has been updated and the licensee now has a formal plant winterization program plan (Mechanical Administrative Procedure MD ADM 20.0)

(Closed) LER 338/83-64 "B" Steam Generator Main Steam Trip Valve (TV-MS-101B) required greater than 2 minutes to close. Procedures were revised to inspect the air line check valves every refueling outage. The inspectors verified that this maintenance is scheduled for the current refueling outage.

(Closed) LER 339/80-05 Operability of "2H" Diesel Generator not properly verified following a "2J" Diesel Generator Trip. The licensee's corrective action included updating the maintenance operating procedures to include the method for verifying frequency and voltage response as required by TS 4.8.1.1.2.a.4. The inspectors verified this has been accomplished.

(Closed) LER 338/80-77 Low Head Safety Injection flow path improperly aligned. The licensee's corrective action for this event was to place administrative control on the "high" recirculation isolation valve to the Refueling Water Storage Tank (RWST). The inspector verified that this has been accomplished.

(Closed) LER 339/80-89 PT-26.3 (Axial Power Distribution Monitoring APDMS) was not performed during the required interval. The licensee's corrective action included changing the control room log to include APDMS checks every four hours. This change does not appear in any control room log at the present time. The reason for this is that PT-26.3 is required to verify the surveillance requirements of TS 3.2.6 and this TS is only applicable in Mode 1 with power greater than P_m , a surveillance power level defined in T.S. 6.9.1.10. For the present core P_m is 100%. If P_m should, in the future, be calculated to be less than 100%, PT-18 will be initiated by the Reactor Engineer to inform the cognizant supervisor that they need to implement a program to verify the surveillance requirements.

(Closed) LER 339/80-51 Operability of 2-FW-126 not checked after maintenance. The inspectors verified that this valve has been incorporated in the periodic test program.

(Closed) LER 338/77-05, 338/83-048, Revision 1, Degradation of service Water Reservoir and "A" Service Water Supply Header isolated to repair pinhole leaks. This revision of LER 338/83-048 contains a narrative outlining all the past problems with the Service Water system and the ongoing corrective actions.

(Closed) LER 338/80-30, 41, 94, 89, 81, 67 and LER 339/80-62, 54. These reports document numerous incidents where the licensee did not perform required surveillances as required. The major problem was that an effective surveillance program did not exist. In response to these numerous missed surveillances a computerized tracking program has been put in place. This program has proven much more reliable in assuring surveillances are performed.

7. Followup of Previously Identified Items

(Closed) 338/81-27-04 missing steel mirror insulation on RTD bypass flow loop. The licensee has verified that the proper insulation was been returned to the piping in question. Additionally, the procedure used for conducting a safety evaluation is under revision and will be tracked as part of the followup to 338, 339/81-04-02.

(Closed) 338/81-05-11 & 339/81-03-10. Incore Instrumentation sump Level Indication. These items were addressed in reports 338/81-25, 339/81-22 with the question of a surveillance program for the level indicators left open. The licensee has studied the problem and taken the position that because of the radiation exposure potential as well as the small volume of these sumps (and the fact they overflow into the containment sumps which have level indicators covered by a surveillance program) a surveillance program is not required for these level instruments.

(Closed) 338/82-34-20, 339/82-34-01 Administrative control of locked valves. The licensee has completed the review of administrative control of locked valves. This was done in part to resolve conflicts between the valve lineup sheets and the administrative locked valve log. Valves required to be controlled by TS were all properly controlled. In a few cases non-Technical Specification valve control was inconsistent between the two units and is being resolved by procedure changes.

(Closed) 338, 339/83-27-01 Review of accumulator level instrument calibration procedure. The licensee's investigation of the repeatability of the calibration procedure resulted in a number of changes being made to the method used. specifically, changes were made to account for system sensitivity to dissolved nitrogen, the order in which the different vent paths are used and the way (how rapidly) the detector is returned to service.

(Closed) 339/82-08-07 Licensee condition 2.c.4.(e). In a letter dated May 20, 1983 the licensee revised the completion dates of environment qualification of equipment under 10 CFR Part 50, paragraph 50.49(g). The status of the licensee's environmental Qualification Program is being tracked using the Environmental Qualification Master List which was submitted to the NRC along with the letter referenced above.

8. ESF System Walkdown

The following selected Engineered Safety Features (ESF) systems were verified operable by performing a complete walkdown of the accessible portions of the systems

Unit 2

May 25 and June 4, 1984 - Quench Spray System (2-OP-7.A)

9. TMI Action Items (2515/65)

(Closed) Unit 2 only, II.B.1.2: Install Reactor Coolant system vents. The inspectors reviewed the Reactor Coolant system vent design and verified that the design change which installed the vents conformed to the design description transmitted to the NRC in the VEPCO Letter, S/N 127, dated April 23, 1982. Specifically, the inspectors verified the following items:

- a. Valves were environmentally qualified and included in the IWV Program.
- b. Piping size and material type were verified against that specified.
- c. Procedures that describe the use of the system were developed in accordance with the Westinghouse Owners Group (WOG) recommendations.
- d. The design change package was approved and processed in accordance with the approved QA program and station administrative procedures.

10. Calibration (56700)

During this inspection period the inspection of the station calibration program was completed by reviewing both the training records of selected instrumentation personnel and the station measuring and test equipment control program.

The individual training records confirmed that the personnel examined met the required experience and training levels. In the inspection of the Measuring and Test Equipment program the inspectors examined Section XII of the North Anna Power Station Administrative Procedures entitled "Control of Measuring and Test Equipment" as well as the latest VEPCO Quality Assurance audit of the program (83-24), completed July 24, 1983. In addition, selected pieces of equipment in the program were inspected for required identification, records and traceability to recognized standards (where applicable).

11. Generic Letter 83-28 "Required Actions Based on Generic Implications of Salem ATWS Events"

Review of the licensee's response to this Generic Letter was discussed in reports 338, 339/84-06. As a result of the questions raised in that report the licensee is making a re-evaluation of the response and the inspectors are conducting a more detailed review.

The licensee shut down Unit 2 during the first weekend in May 1984 to perform reactor trip breaker maintenance. This was done to conform with the vendor's guidance on the maintenance interval. The licensee had taken exception to the recommended interval in the Generic Letter response but later felt they did not have adequate justifications for so doing.

The inspectors have reviewed the response again and have asked the licensee to address a number of questions in their review. Additionally, the inspectors have reviewed the proposed design for the automatic actuation of the reactor trip breaker shunt trip.

As proposed, the shunt trip modification is taken from the generic WOG design and will be controlled by the same 48VDC as the undervoltage (UV) trip. The inspectors indicated in reports 338 & 339/84-06 that Licensee Event Report 339/83-39 was left open pending NRC Region II investigation of the two events where a Solid State Protection System (SSPS) UV output board failed. With the proposed shunt trip modification installed, another similar circuit board failure would prevent both the shunt and UV trips from opening the associated reactor trip breaker.

Although reliability of the reactor protection system would be increased by installing the proposed shunt trip modification, reliability could be made even greater by actuating the shunt trip independently of the 48VDC that is controlled by the SSPS UV output board.

12. IE Circulars and Bulletins

The inspectors have reviewed the IE circulars listed and have verified they have been received and reviewed by licensee management:

(Closed) 339/78-CI-09 "Arcing of General Electric Company NEMA Size 2 Contractors"

(Closed) 339/80-CI-01 "Service Advice for General Electric Induction Disc Relays."

(Closed) 338/80-CI-10 "Failure to Maintain Environmental Qualification of Equipment."

(Open) 338, 339/80-BU-12 "Decay Heat Removal System Operability." In the licensee's response to this bulletin it was specified that procedures needed to be revised "to ensure a diverse method of residual heat removal if one RHR subsystem is inoperable." The response stated that one operable steam

generator capable of removing heat or at least one Low Head Safety Injection Pump (and the RWST) in the train opposite the RHR subsystem removed from service, would be available if an RHR subsystem was removed from service.

The inspectors have reviewed the licensee's procedures and further changes should be made to include an update of the prerequisites/precautions of the Maintenance Operating Procedures for the RHR pumps. Additionally, these procedures along with Abnormal Procedures (1&2-AP-11) need to include the specifics of the requirements outlined in the response (i.e. Low Head Safety Injection Pump of the opposite train.)